

**Development of a High Resolution Weather Forecast Model for Mesoamerica
Using the NASA Nebula Cloud Computing Environment**

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Abstract:

Over the past two years, scientists in the Earth Science Office at NASA's Marshall Space Flight Center (MSFC) have explored opportunities to apply cloud computing concepts to support near real-time weather forecast modeling via the Weather Research and Forecasting (WRF) model. Collaborators at NASA's Short-term Prediction Research and Transition (SPoRT) Center and the SERVIR project at Marshall Space Flight Center have established a framework that provides high resolution, daily weather forecasts over Mesoamerica through use of the NASA Nebula Cloud Computing Platform at Ames Research Center. Supported by experts at Ames, staff at SPoRT and SERVIR have established daily forecasts complete with web graphics and a user interface that allows SERVIR partners access to high resolution depictions of weather in the next 48 hours, useful for monitoring and mitigating meteorological hazards such as thunderstorms, heavy precipitation, and tropical weather that can lead to other disasters such as flooding and landslides. This presentation will describe the framework for establishing and providing WRF forecasts, example applications of output provided via the SERVIR web portal, and early results of forecast model verification against available surface- and satellite-based observations.